

## ABSTRACT OF THE DISCLOSURE

A method is provided for planarizing a structure such as a shallow trench  
isolation region on a semiconductor substrate. A semiconductor substrate is  
provided having raised and lowered regions with substantially vertical and  
horizontal surfaces. The lowered regions may correspond to trench regions. Filler  
material such as non-conformal high density plasma oxide may be deposited over  
the horizontal surfaces to at least a thickness equal to a predetermined height so as  
to provide raised and lowered regions of the filler material. The raised regions of  
the filler material may then be selectively removed without removing the filler  
material in the lowered regions.